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<b>58145Y/33</b> <b>E32 M25</b> <b>ARIT- 25.12.75</b> ARITA KENKYUSHO KK      *J5 2078-608 25.12.75-JA-155229 (02.07.77) C22b-05/02 C22b-34/10 Treating titanium group metals to obtain metals or nitrides - by reducing with hydrogen and ammonia	<b>E(34-E, 35-K, 35-L) M(22-H1, 25-C2).</b> <b>130</b>
<p>Chlorides of Ti gp. metals e.g. Ti, Zr, Hf, etc. and similar metals such as Th are reduced with reductant consisting mainly of H<sub>2</sub> and NH<sub>3</sub>. When H<sub>2</sub> and NH<sub>3</sub> are reacted with the chlorides at 200 to 800°C metal is formed according to the equation formula <math>MCl_4 + 2H_2 + 4NH_3 \rightarrow M + 4NH_4Cl</math>.</p> <p>Substitution of a part of the H<sub>2</sub> and NH<sub>3</sub> with base metals such as Na, Mn and Al makes possible redn. at &lt; 200°C. When H<sub>2</sub> is used in an increased amount and excess H<sub>2</sub> is cycled in the reaction system, side reactions are controlled and metals are obtd. in powder form. The reaction under press. brings about spongy metals.</p> <p>When the amt. of hydrogen is reduced and ammonia is used in an increased amt. nitride-contg. metals are obtained at a higher reactn. temp.</p>	<b>J52078608</b>

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